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RED SPIDER



a, Red spiders (actual size) on under side of leaf; *b*, adult and young (40 times actual size); *c*, leaf rusted from red spider feeding.

(See other side for life history and control)

Picture Sheet No. 20

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+ RED SPIDER

(Tetranychus bimaculatus Harvey)

U. S. DEPARTMENT OF AGRICULTURE

Life History and Injury

The mites known as red spiders are so small that they can hardly be seen without the aid of a magnifying glass. They may be greenish or yellowish in color, but the females are usually reddish and the smaller males reddish yellow. Red spiders are found throughout the Cotton Belt and feed from June to September on almost 200 kinds of plants, including many garden and field crops, ornamentals, and weeds. In the South they pass the winter on leaves that remain green, such as wild blackberry, Jerusalem-oak, wild vetch, and violet. The red spiders move to cotton early in the summer, and when cotton is no longer suitable for food they return to weeds or other plants. They crawl on the ground and are carried by wind or by rainwater. Red spiders multiply rapidly and may have as many as 17 generations a year. Hot, dry conditions are most favorable for rapid multiplication, and a heavy rain often checks an outbreak. Red spiders live on the under side of the leaves, where they lay their eggs and spin delicate webs. They suck the sap from the leaves, the under surfaces of which become thickly dotted with whitish feeding punctures. Red spider injury is often called "rust." It is first indicated by blood-red spots on the upper surface of the leaves. The entire leaf then reddens or turns rusty brown, curls, and drops from the plant. The loss of leaves causes shedding of small bolls and may prevent the lint from developing properly in large bolls. Damage is more serious in the Southeast, but occurs in all cotton-growing States.

Control

Preventing the spread of red spiders to cotton by destroying weeds around the fields and by controlling the pest on dooryard plants is of first importance. Pulling out and destroying the first few cotton plants that become infested often stamps out an infestation. Dusting cotton with finely ground sulfur at the rate of 10 to 25 pounds per acre is the most practical direct-control measure. Satisfactory control is also obtained by spraying with the following insecticides: (1) Potassium sulfide (1 ounce in 2 gallons of water); (2) lime-sulfur (home-made or commercial); (3) kerosene emulsion (2 gallons of kerosene and $\frac{1}{2}$ pound of soap to 12 gallons of water);¹ and (4) flour paste (cook 1 pound of flour in 1 gallon of water until smooth and add 12 gallons of water). A second application a week later is necessary to kill the red spiders that have hatched since the first application. Care should be taken to cover the under side of the leaves thoroughly with the dust or spray.

¹ To make a kerosene emulsion take 1 gallon of soft water, one-half pound of laundry soap, and 2 gallons of kerosene. Dissolve the soap in the water by boiling, add the kerosene immediately on removing the soapy water from the fire, and pump the mixture vigorously for about 10 minutes through a spray pump into another container. For spraying cotton, this stock mixture should be diluted with 12 gallons of water.